Transport GT24

B2932

Service Engineer’s Manual

PREFACE

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Version 1.0

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Notice for the USA Compliance Information Statement (Declaration of Conformity Procedure) DoC FCC Part 15: This device complies with part 15 of the FCC Rules

Operation is subject to the following conditions:

1) This device may not cause harmful interference, and

2) This device must accept any interference received including interference that may cause undesired operation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Plug the equipment into an outlet on a circuit different from that of the receiver.

Consult the dealer on an experienced radio/television technician for help.

Notice for Canada

This apparatus complies with the Class B limits for radio interference as specified in the Canadian Department of Communications Radio Interference Regulations. (Cet appareil est conforme aux norms de Classe B d'interference radio tel que specifie par le Ministere Canadien des Communications dans les reglements d'ineteference radio.)

Notice for Europe (CE Mark) This product is in conformity with the Council Directive 89/336/EEC, 92/31/EEC (EMC).

CAUTION: Lithium battery included with this board. Do not puncture, mutilate, or dispose of battery in fire. Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by manufacturer. Dispose of used battery according to manufacturer instructions and in accordance with your local regulations.

About this Manual

This manual provides you with instructions on installing your Transport GT24, and consists of the following sections:

Chapter 1: Provides an Introduction to the Transport GT24 B2932 barebones, packing list, describes the external components, gives a table of key components, and provides block diagrams of the system.

Chapter 2: Covers procedures on installing the CPU, memory modules, an optional PCI-E card, and hard drives.

Chapter 3: Covers removal and replacement procedures for pre-installed components.

Appendix: Describes the differences between mainboard BIOS and system BIOS. The cable connection tables are also provided for reference of system setup.

Conventions

The following conventions are used in the manual:

Note: Calls attention to important information.

Warning: Provides information to prevent harm to user or damage to equipment.

SAFETY INFORMATION

Before installing and using the Transport GT24, take note of the following precautions:

- Read all instructions carefully.
- Do not place the unit on an unstable surface, cart, or stand.
- Do not block the slots and opening on the unit, which are provided for ventilation.
- Only use the power source indicated on the marking label. If you are not sure, contact the Power Company.
- The unit uses a three-wire ground cable, which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this kind of plug, contact your electrician to replace your obsolete outlet.
- Do not place anything on the power cord. Place the power cord where it will not be in the way of foot traffic.
- Follow all warnings and cautions in this manual and on the unit case.
- Do not push objects in the ventilation slots as they may touch high voltage components and result in shock and damage to the components.
- When replacing parts, ensure that you use parts specified by the manufacturer.
- When service or repairs have been done, perform routine safety checks to verify that the system is operating correctly.
- Avoid using the system near water, in direct sunlight, or near a heating device.
- Cover the unit when not in use.

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Chapter 1: Overview

1.1 About the TYAN Transport GT24 B2932

Congratulations on your purchase of the TYAN Transport™ GT24 B2932, a highly-optimized rack-mountable barebone system. The TYAN Transport GT24 B2932 offers the latest in dual processor server systems, providing a rich feature set and incredible performance. Leveraging advanced technology from AMD®, the TYAN Transport GT24 B2932 based server system are capable of offering scalable 32 and 64-bit computing, high-bandwidth memory design, and a lightning-fast PCI-X bus implementation. The TYAN Transport™ GT24 B2932 not only empowers your company in today's demanding IT environment but also offers a smooth path for future application usage.

The TYAN Transport™ GT24 B2932 uses TYAN's latest tooling-made chassis featuring a robust structure, tool-less and modularized design, and a solid mechanical enclosure. All of this provides the TYAN Transport™ GT24 B2932 the power and flexibility to meet the needs of nearly any server application.

1.2 Product Models

Model	HDD Bays	HDD Supported	HDD Backplane	Motherboard
B2932G24W4H	Removable, 4 HDDs	SAS/SATA	4-port SAS/SATA	S2932WG2NR
B2932G24V4H	Removable, 4 HDDs	SATA	4-port SAS/SATA	S2932WG2NR-L-B

B2932G24W4H

B2932G24V4H

1.3 Features

Enclosure
- Industry 19” rack-mountable 1U chassis
- Storage bay
  - (1) slim CD-ROM bay
  - (4) 3.5” HDD bays
- Dimension:
  D 25.4 x W 17.2 x H 1.72 inch (645x436x43.6mm)

Processors
- Dual 1207-pin ZIF L1 sockets
- Supports up to two AMD Opteron™ 2000/8000 series processors

Chipset
- nVIDIA nForce Pro 3600
- NEC nPD720400
- SMSC DME5017
- LSI 1068E

Memory
- Sixteen (16) 240-pin DDRII DIMM sockets (8 on CPU1 and 8 on CPU2).
- Supports up to 64GB of Registered of DDRII 667/553/400 memory

Expansion Slots
- One (1) x8 PCI-E with riser (pre-installed)

Back I/O Ports
- One (1) PS/2 Keyboard and one (1) mouse ports
- One (1) 9-pin UART Serial port
- One 15-pin VGA port
- Two USB 2.0 ports
- Two RJ45 10/100/1000 Base-T port w/ activity LED

Front Panel Features
- I/O
  - (2) USB 2.0 ports
- LED indicators
  - Power LED
  - (2) LAN LEDs
  - HDD active LED
  - Warning LED
  - ID LED
- Switches
  - Power switch
  - NMI switch
  - Reset switch
  - ID switch

Storage
- Model B2932G24V4H
  - Serial ATA II Host controllers embedded
  - Supports six (6) serial ports running at 3.0Gb/s
  - NV RAID 0, 1, 0+1, 5, and JBOD support
- Model B2932G24W4H
  - LSI 1068E SAS controller
  - Supports eight (8) SAS ports running at 3.0Gb/s
  - NV RAID 0, 1 and JBOD support

Networking
- lTwo 10/100/1000 Base-T LAN (nForce Pro 3600 integrated MAC with Marvell 88E1121 Gigabit Ethernet PHY)

Video
- ATI® ES1000TM PCI graphics controller
- 32MB DDR Frame Buffer of video memory

Motherboard
- B2932G24V4H
  - TYAN Thunder n3600M 2932G2NR-L-B
- B2932G24W4H
  - TYAN Thunder n3600M 2932GWG2NR
- E-ATX footprint (13” x 12”)

BIOS
- AMI BIOS on 8Mbit LPC Flash ROM
- Supports ACPI 2.0
- PnP, DMI2.0, WfM2.0 power management

Power Supply
- EPS 12V, 1U, 650W/600W High efficiency PSU
- 100V~240V AC input

Server Management

- Automatic fan speed control
- Support Tyan Server Management (TSM)
- Option TYAN SMDC M3291, IPMI v2.0 compliant remote server management kit

System Cooling

- (2) 40*40*56mm 15000rpm heavy-duty fans with fan speed monitor/control
- (3) 40*40*28mm 15000rpm heavy-duty fans with fan speed monitor/control
- (2)Passive CPU Heatsink

Regulatory

- FCC Class B (Declaration of Conformity)
- CE (Declaration of Conformity)

Environment Temperature

- Operating temperature (5^{o}C~35^{o}C)
- Non-operating temperature (-40^{o}C~70^{o}C)

1.4 Unpacking

1.4.1 Accessories

If any items are missing or appear damaged, contact your retailer or browse to TYAN's Web site for service: http://www.tyan.com.

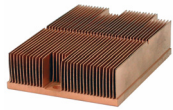
The Web site also provides information on other TYAN products, plus FAQs, compatibility lists, BIOS settings, and more.

1 x Tyan driver CD

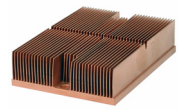
Power Cords
Left to right: Europe, US

Barebone Manual

Mainboard Manual



CPU1 Heatsink

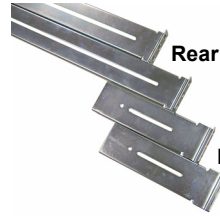


CPU2 Heatsink

HDD Screws

Rail Kit

Mounting Bracket x 4



Sliding Brackets
Front L-Bracket x 2
Rear L-Bracket x 2

Mounting Ears & Screws

Sliding Rails x 2

Screws Kit

FDD Kit

FDD Cable

FDD Installing Rails & Screws

FDD Backplane Cable

1.4.2 FRU Parts

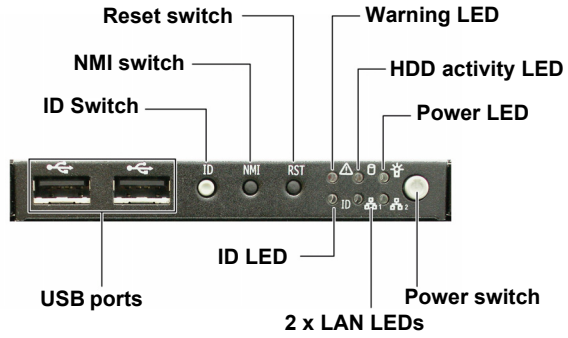
Item	Model Number	Quantity	Description
Standard Parts			
Motherboard	S2932G2NR-L-B	1	TF-Motherboard Tyan S2932G2NR-L-B(B2932G24V4H SKU)
	S2932WG2NR	1	TF-Motherboard Tyan S2932WG2NR (B2932G24W4H SKU)
Chassis Unit	CCHA-0030	1	TF-CHASSIS UNIT;GT24
Power Supply	CPSU-0112	1	TF-Delta 650W TDPS -650CB C 1U PSU
	CPSU-0260	1	TF-Delta 600W TDPS -600CB 1U PSU
FAN	CFAN-0066	2	TF-Fan Assy; SanyoDenki 40x40x56
	CFAN-0171	3	TF-Fan Assy; Sunon 40x40x28
Heat Sink & Cooler	CHSB-0053	1	TF-Heatsink CPUO
	CHSK-0052	1	TF-Heatsink CPU1
Peripheral Drives & Parts	CDVD-0020	1	TF-DVD DRIVE; DV-28E-R93,TEAC
	CPCA-0230	1	TF-CD-ROM Adapter board with screw
Backplane	M1208	1	TF-PWA;PWA-GT24-M1208, SATA/SAS BD
	M1012-RS	1	TF-Front Panel Adaptor Board, M1012-RS
	M1003-RS	1	TF-LED Board, M1003-RS
Riser Card	M2083-RS	1	TF-PCI-E Riser Card M2083-RS
Rack Mounting Parts	CRAL-0031	1	TF-RAIL ASSY KIT;24",GT24
	CEAR-0050	1	TF-Mounting Ear Kit, for GT20/GT24

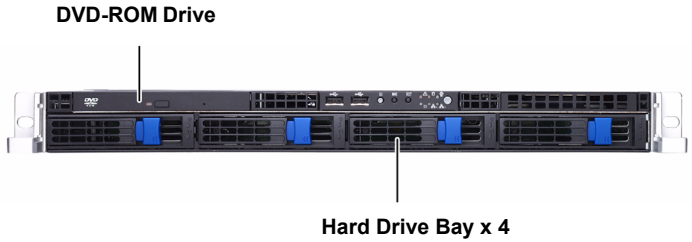
Item	Model Number	Quantity	Description
Cable Set	CCBL-0326	4	TF-SATA data cable, L=250mm HS/180-HS/180
	CCBL-0340	1	TF-Front panel Control Board Cable HS2*14Pins/HS2*14 L=250mm(Flat Cable)
	CCBL-0409	1	TF-TYFP I Cable
	CCBL-0419	1	TF-TYFP II Cable
	CCBL-0433	1	TF-CD-ROM ATA66 FLAT CABLE
	CCBL-0420	1	TF-CD-ROM Power cable S4P/S4P L=80mm
	CCBL-0652	1	TF-FAN CABLE L=160mm
	CCBL-0493	1	TF- SAS HDD Fail Cable (B2932G24W4H SKU)
	CCBL-0310	1	TF-PWR CORD; US, 125V, 18AWGX3C
	CCBL-0300	1	TF-PWR CORD; EU, 250V, H05VV-FX3C
Optional Parts			
Riser Card	M2061	1	TF-PCI-E Riser Card M2061
LCD Module	CLCM-0040	1	LCD module kit for GT series 1U chassis
Chassis Front Bezel	CFBZ-0070	1	Front bezel assembly for GT series 1U chassis

1.5 About the Product

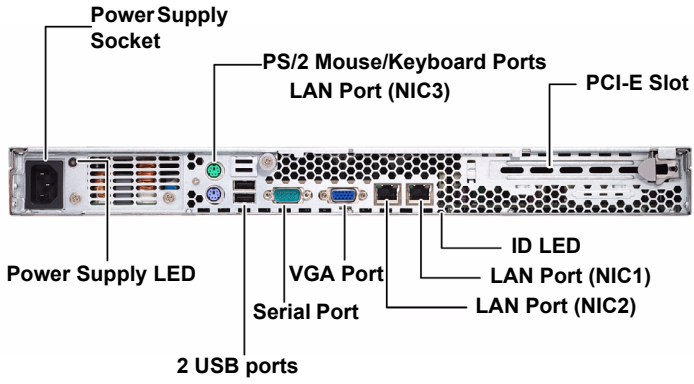
This section contains the hardware diagrams and a block diagram of the GT24 system.

1.5.1 System Front View





1.5.2 System Rear View



1.5.3 LED Definition

Front Panel

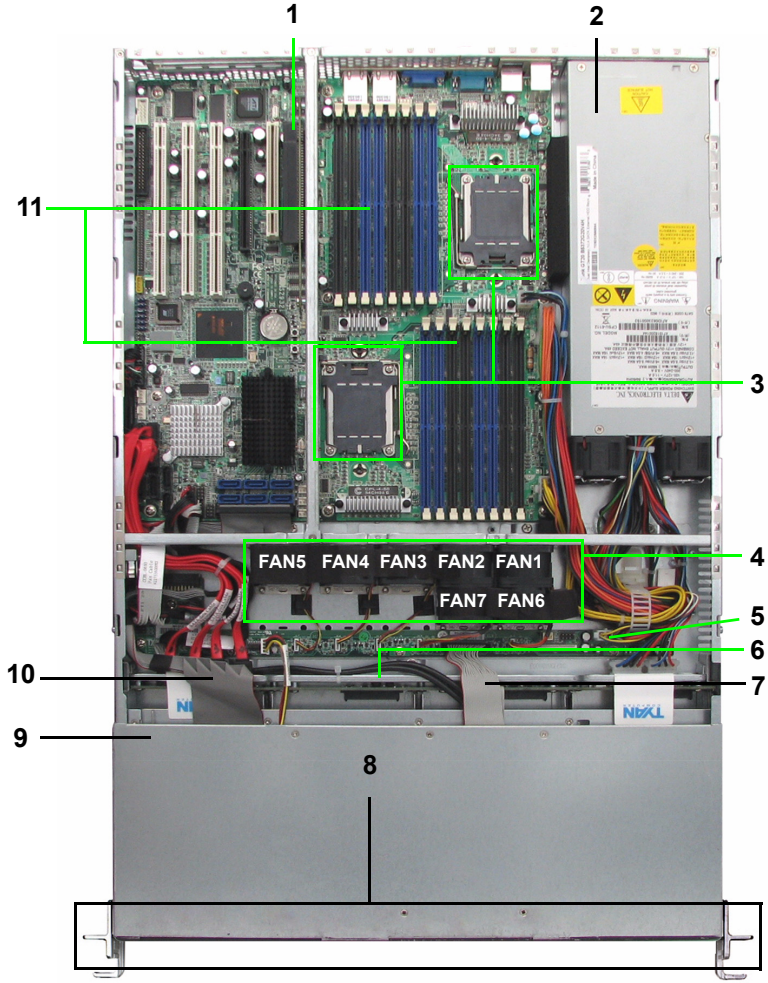
LED	Color	State	Description
Power	Green	ON	Power ON
	OFF	OFF	Power OFF
HDD Activity	Amber	Random Blinking	HDD access activity
	OFF	OFF	No disk activity
LAN1/LAN2 Activity	Green	ON	LAN linked
	Green	Blinking	LAN accessing
	OFF	OFF	No LAN linked
Warning	Red	ON	Fan fails / Abnormal shut down
	OFF	OFF	Normal
ID LED	Blue	ON	System is identified
	OFF	OFF	System is not identified
Hot Swappable HDD Tray Power LED	Green	ON	Power connected
	OFF	OFF	Power disconnected
Hot Swappable SATA HDD Access LED	Amber	Random Blinking	HDD access activity
	OFF	OFF	No disk activity
Hot Swappable SAS HDD Access LED	Amber	ON	HDD ready
	Amber	Random Blinking	HDD access activity
	OFF	OFF	HDD not ready

Rear I/O LED

LED	Color	State	Description
LAN1/LAN2 Linkage/ Activity (Left Side)	Green Green OFF	ON Blinking OFF	10Mb/100Mb/1000Mb linked 10Mb/100Mb/1000Mb activity No LAN linked and activity
LAN1/LAN2 Linkage/ Activity (Right Side)	Yellow	1 Blinking 2 Blinking 3 Blinking OFF	10Mb mode 100Mb mode 1000Mb mode NO LAN linked and activity
Note: In 10 Mbps, the Right LED blinks yellow once in repeat and continuous action. In 100 Mbps, the Right LED blinks yellow twice in repeat and continuous action. So does the condition in 1000 Mbps.			
ID LED	Blue OFF	ON OFF	System is identified System is not identified
Delta Power Supply LED	Green Green Amber Amber OFF	ON 1Hz Blinking ON 1Hz Blinking OFF	Output ON and OK AC present/Only 5Vsb ON Power supply critical event causing a shutdown: failure, OCP, OVP, fan fail Power supply warning event where the power supply continues to operate: high temp., high power, high current, slow fan No AC power

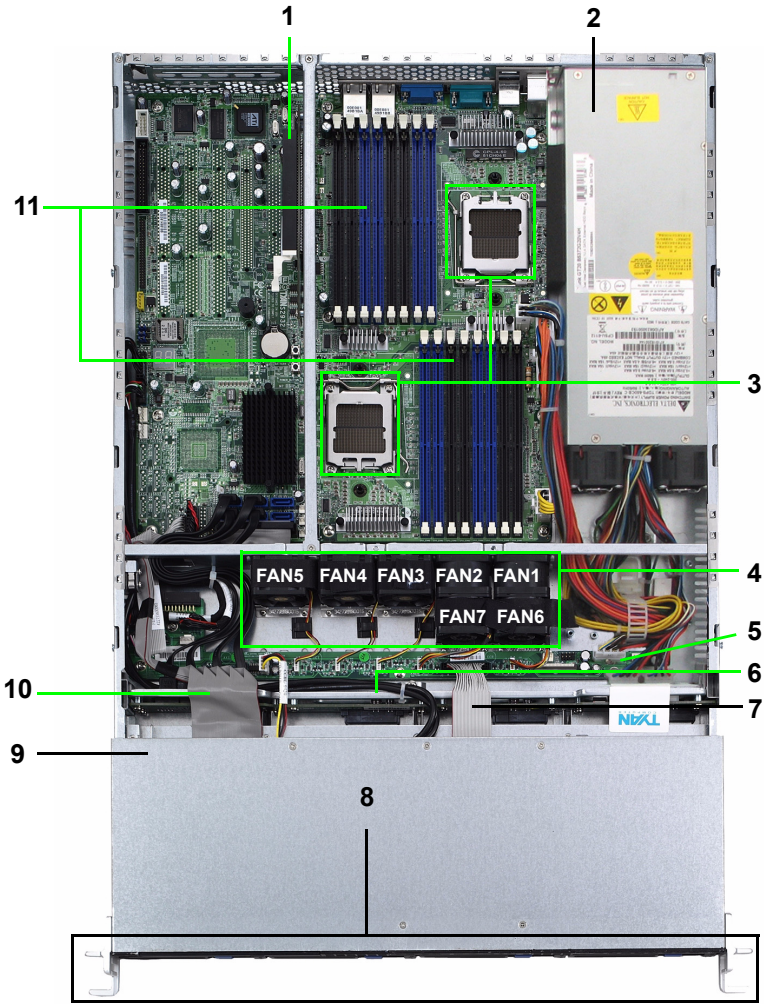
1.5.4 System Internal View

B2932G24W4H



1. PCI-Slot (with riser card M2083)
2. EPS 12V Power Supply
3. CPU Sockets
4. System Fans (Top-Right to left: FAN1, FAN2, FAN3, FAN4, FAN5; Bottom-Right to left: FAN6, FAN7)
5. Adapter Board
6. SAS/SATA Backplane
7. LED Control Board Cable
8. Four SATA HDDs
9. Slim DVD-ROM
10. DVD-ROM Cable
11. Memory Slots

B2932G24V4H



1. PCI-Slot (with riser card M2083)
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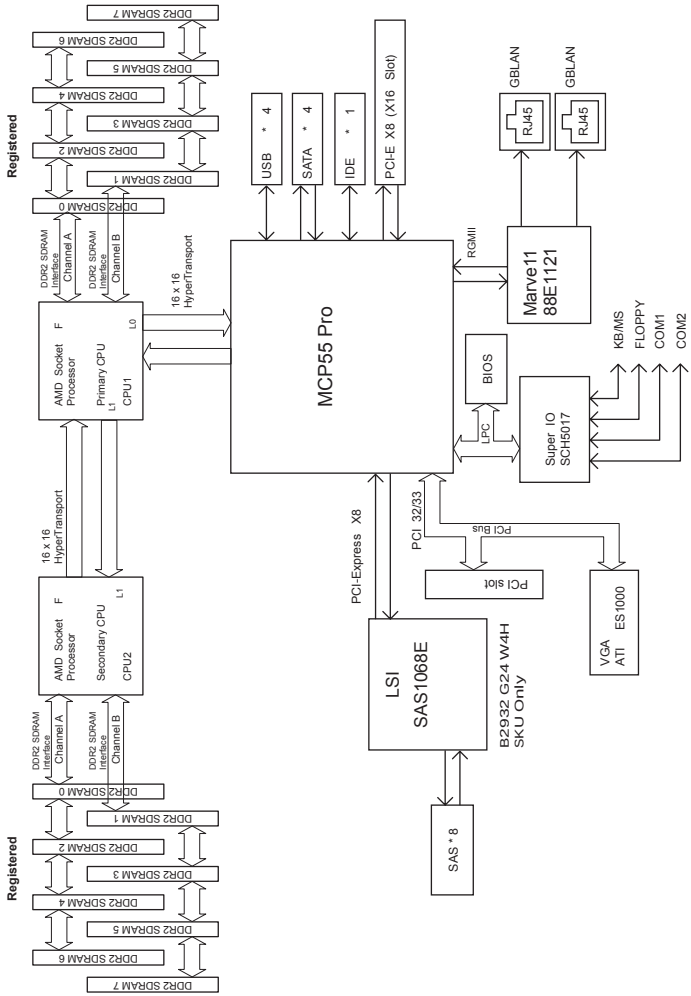
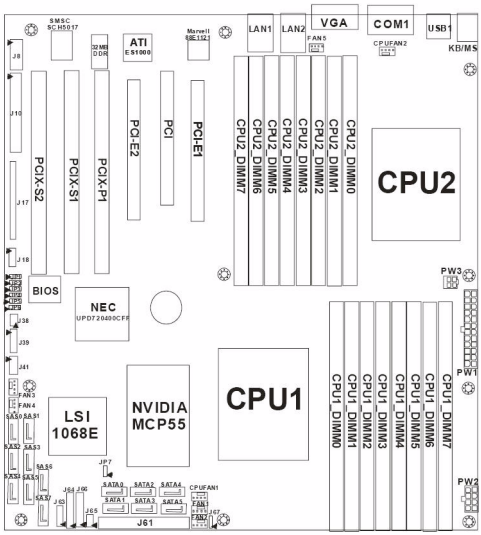
5. Adapter Board
6. SAS/SATA Backplane
7. LED Control Board Cable
8. Four SATA HDDs
9. Slim DVD-ROM
10. DVD-ROM Cable
11. Memory Slots

1.5.5 GT24-B2932 System Block Diagram



1.5.6 S2932 Board Parts, Jumpers, and Connectors



JP7
- Clear CMOS Jumper
Pin 1-2 closed: Normal (Default)
Pin 2-3 closed: Clear CMOS

JP1/JP2
- PCI-X1/PCI-X2 Speed Setting Jumper
Pin 1-2 closed: 133MHz
Pin 2-3 closed: 100MHz

JP3/JP4
- ASF2.0/SMDC Select Jumper
Pin 1-2 closed: ASF2.0 (Default)
Pin 2-3 closed: SMDC

JP5
- VGA Enable/Disable Jumper
Pin 1-2 closed: Enable (Default)
Pin 2-3 closed: Disable

JP6
- SAS Enable/Disable Jumper
Pin 1-2 closed: Enable (Default)
Pin 2-3 closed: Disable

J18	IPMB Pin Header	J39/J63	TYAN Front Panel 2 Connector (for Barebone)
J17	SMDC Connector	J38	LCM Pin Header (for Barebone)
J41	Front Panel USB2.0 Connector	J65	SGPIO Header (for Barebone)
J8	COM Port Pin Header	J66	SAS Fault LED Pin Header (for Barebone)

J64 Front Panel Header

HDDLED+	1		2	PWR LED+
HDDLED-	3		4	PWR LED-
Reset Switch	5		6	Power Switch
Reset Switch	7		8	Power Switch
NMI	9		10	Warning LED+
NMI	11		12	Warning LED-
5Vsb	13		14	Key
SMBus Data	15		16	GND
SMBus Clock	17		18	Chassis Intr#

Power Supply
The S2932 is EPS12V compatible.

- ❑ 3 power connectors: EPS12V (24-pin + 8-pin + 4-pin)

Check User's Manual for details

Chapter 2: Setting Up

2.0.1 Before You Begin

This chapter explains how to install the CPU, CPU heatsink, memory modules, and hard drives. Instructions on inserting a PCI-E card are also given.

Take note of the precautions mentioned in this section when installing your system.

2.0.2 Work Area

Make sure you have a stable, clean working environment. Dust and dirt can get into components and cause malfunctions. Use containers to keep small components separated. Putting all small components in separate containers prevents them from becoming lost. Adequate lighting and proper tools can prevent you from accidentally damaging the internal components.

2.0.3 Tools

The following procedures require only a few tools, including the following:

- A cross head (Phillips) screwdriver
- A grounding strap or an anti-static pad

Most of the electrical and mechanical connections can be disconnected using your fingers. It is recommended that you do not use needle-nosed pliers to remove connectors as these can damage the soft metal or plastic parts of the connectors.

2.0.4 Precautions

Components and electronic circuit boards can be damaged by discharges of static electricity. Working on a system that is connected to a power supply can be extremely dangerous. Follow the guidelines below to avoid damage to the Transport GT24 or injury to yourself.

- Ground yourself properly before removing the top cover of the system. Unplug the power from the power supply and then touch a safely grounded object to release static charge (i.e. power supply case). If available, wear a grounded wrist strap. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Avoid touching motherboard components, IC chips, connectors, memory modules, and leads.
- The motherboard is pre-installed in the system. When removing the motherboard, always place it on a grounded anti-static surface until you are ready to reinstall it.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress circuit boards.
- Leave all components inside the static-proof packaging that they ship with until they are ready for installation.
- After replacing optional devices, make sure all screws, springs, or other small parts are in place and are not left loose inside the case. Metallic parts or metal flakes can cause electrical shorts.

Notes:

- All connectors are keyed to only attach one way.
- Always use the correct screw size as indicated in the procedures.

2.1 Rack Mounting

After installing the necessary components, the Transport GT24 can be mounted in a rack using the supplied rack mounting kit.

Rack mounting kit

Sliding Rails x 2

Sliding Brackets x 4 (Front x 2, Rear x 2)

Mounting Ears (including screws) x 2

Screws Kit x 1

Mounting Brackets x 4

2.1.1 Installing the Server in a Rack

Follow these instructions to mount the Transport GT24 into an industry standard 19" rack.

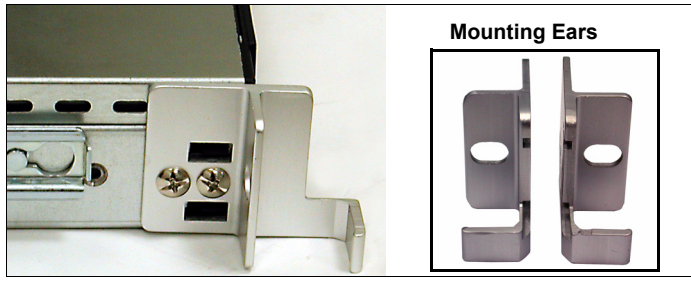
NOTE: Before mounting the Transport GT24 in a rack, ensure that all internal components have been installed and that the unit has been fully tested.

Screws List

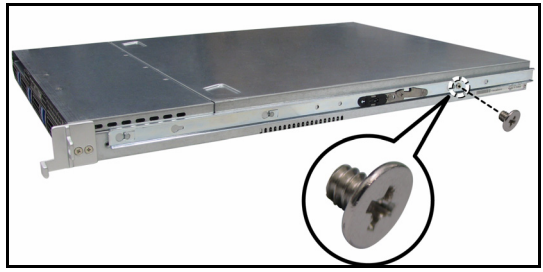
No.	Screw	Size	Quantity
A		M4-4L	18
B		M5-8L	10
C		M5-15L	4

Installing the Inner Rails to Chassis

1. Screw the mounting ear to each side of Transport GT24 as shown using 2 screws from the supplied screws kit.

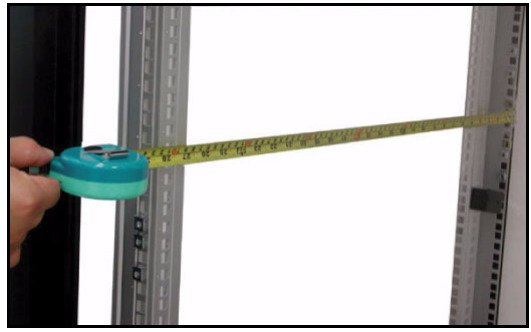


2. Draw out the inner rails from rail assembly. Install inner rails to left and right sides of chassis using 1 M4-4L(A) screw for each side.

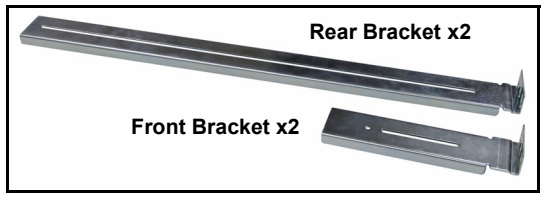


Installing Outer Rails to the Rack

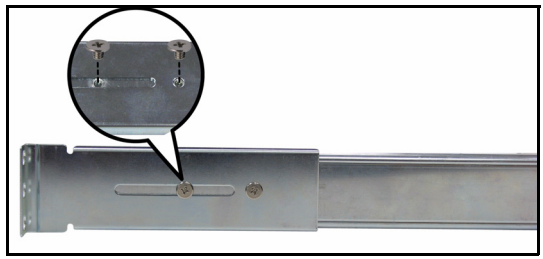
3. Measure the distance between inner side of the front and rear mounting brackets in the rack.



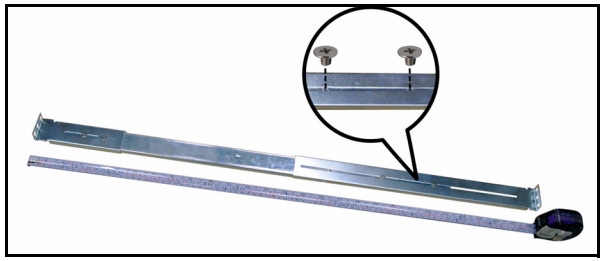
4. Locate the front and rear brackets.



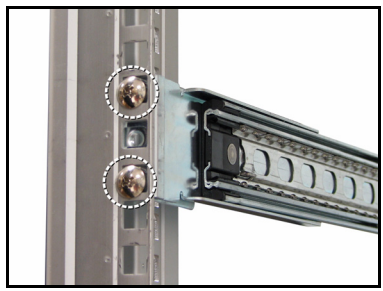
5. Secure the front bracket to outer rail with 2 M4-4L(A) screws.



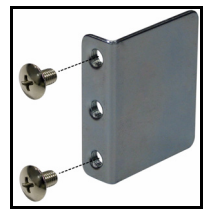
6. Reserve the distance same as in Step 2 on rear bracket. Secure the rear bracket to outer rail with 2 M4-4L(A) screws.



7. Secure the outer rail to the rack using 2 brackets and 4 M5-8L(B) screws for each side. Secure the mounting brackets from inside, not outside, of the rack.

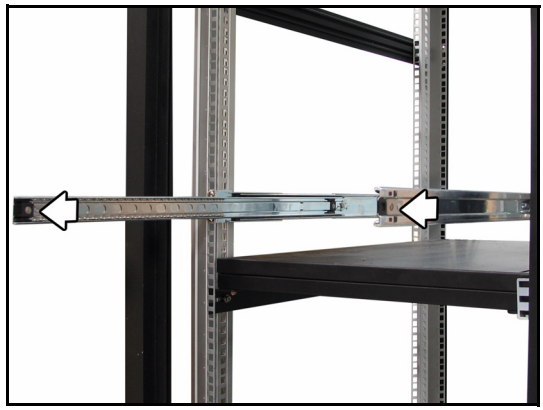


Mounting Bracket

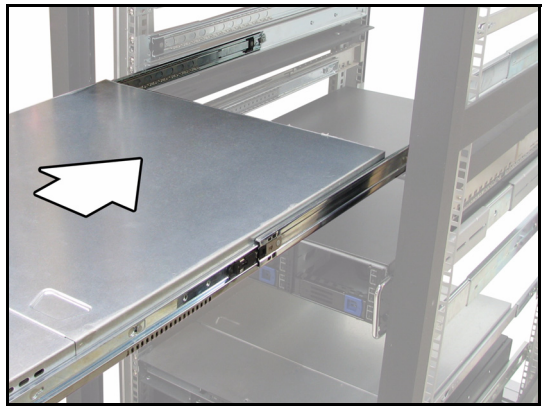


Rackmounting the Server

8. Draw out the middle rail to the latch position.

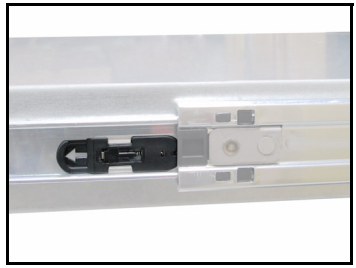


9. Lift the chassis and then insert the inner slide rails into the middle rails.

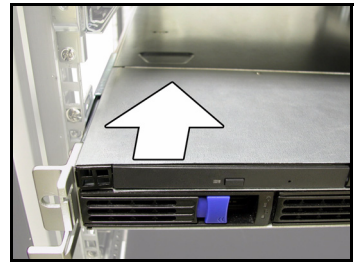


10. Push the chassis in and press the latch key (A). Then push the whole system into the rack (B).

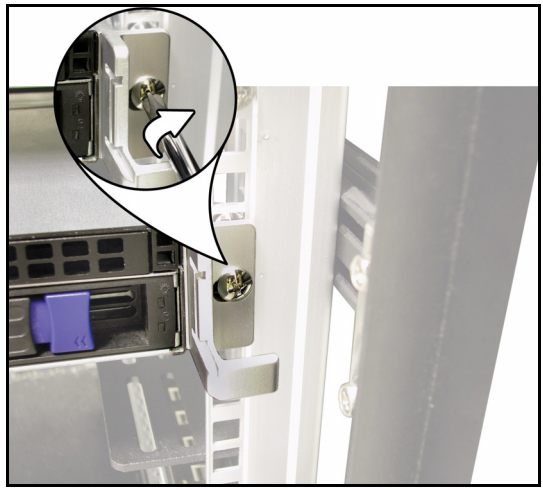
A



B



11. Secure the mounting ears of chassis to the rack with 2 M5-15L(C) screws.



NOTE: To avoid injury, it is strongly recommended that two people lift the Transport GT24 into the place while a third person screws it to the rack.

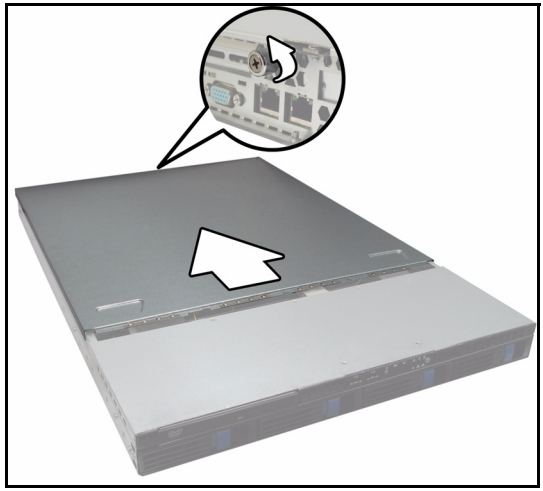
2.2 Installing Motherboard Components

This section describes how to install components on to the motherboard, including CPU, memory modules and PCI-E card.

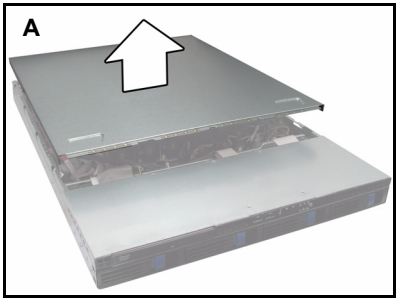
2.2.1 Removing the Chassis Cover

Follow these instructions to remove the Transport GT24 chassis cover.

1. Release the screw on the back side. Then slide the chassis cover in the direction of arrow.



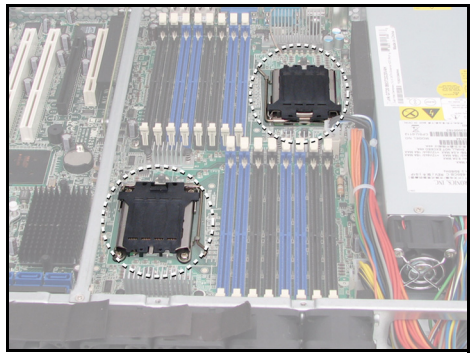
2. Lift the cover off.



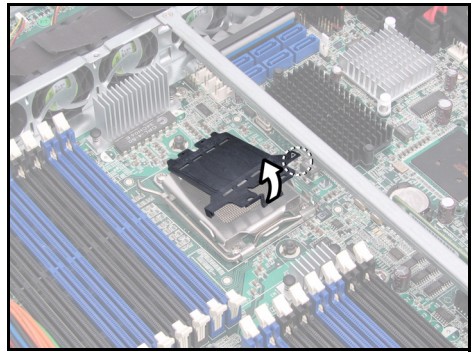
2.2.2 Installing the CPU, Heatsink and Air Duct

Follow these instructions to install the CPU, CPU heatsink and air duct.

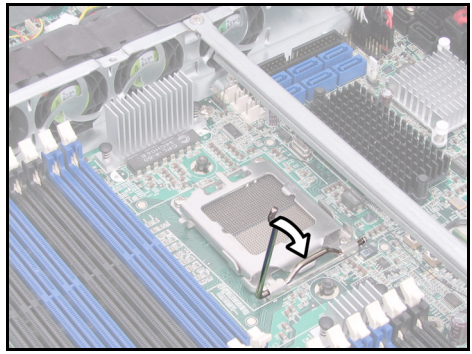
1. After removing the pre-installed air duct, locate the CPU sockets.



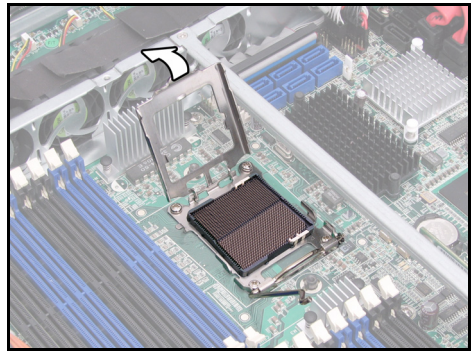
2. Take off the CPU protection cap.



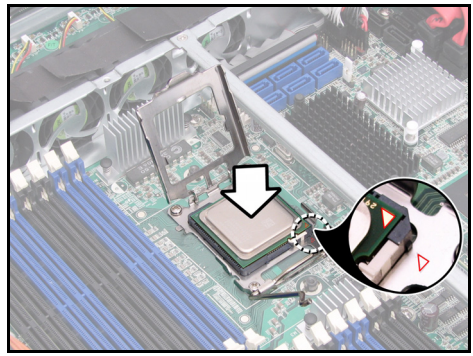
3. Pull the CPU lever up to unlock the CPU socket.



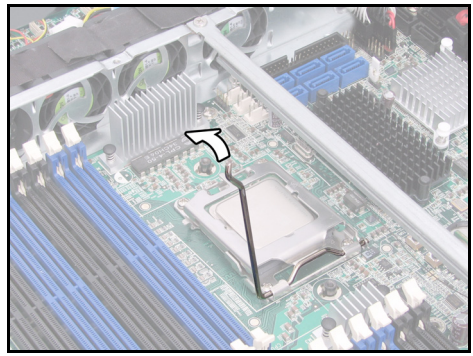
4. Open the socket in the direction as shown.



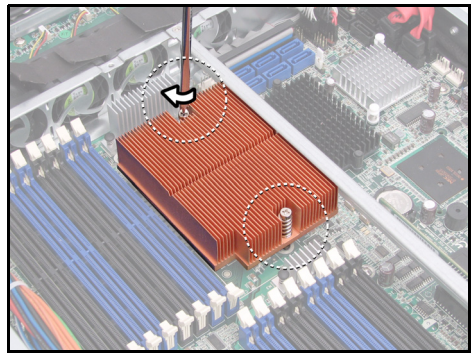
5. Place the CPU in the CPU socket, ensuring that pin 1 is located as shown below.



6. Close the socket and press the CPU socket lever down to secure the CPU.



7. Place the heatsink on top of the CPU and screw into place as shown.

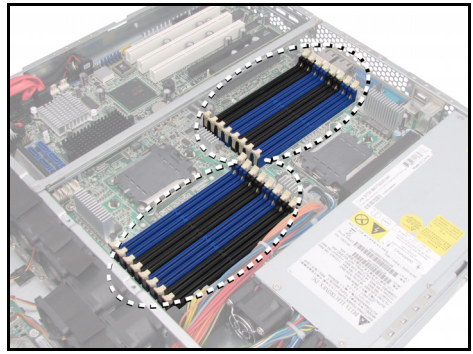


8. Place and screw the air duct back.

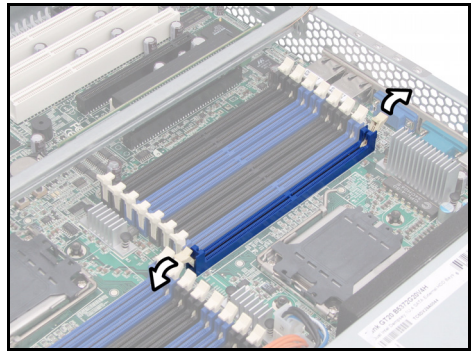
2.2.3 Installing the Memory

Follow these instructions to install the memory modules on the motherboard.

1. Locate the memory slots on the motherboard.

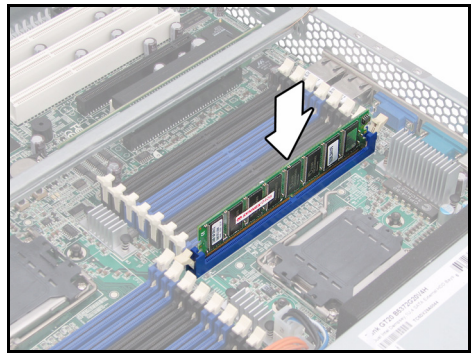


2. Press the memory slot locking levers in the direction of the arrows as shown in the following illustration.



3. Align the memory module with the slot. The module has indentations that align with notches in the slots.

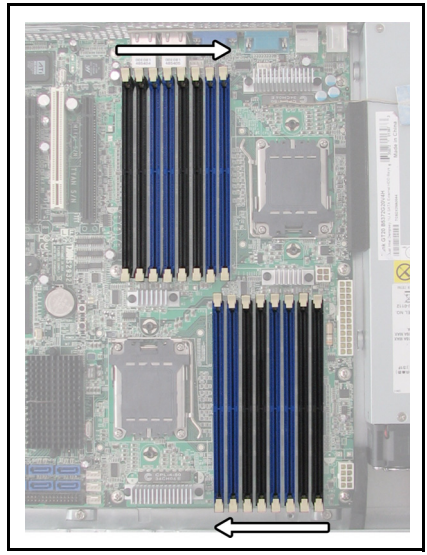
4. Insert the memory module into the slot as shown.



When inserted properly, the memory slot locking levers lock automatically onto the indentations at the ends of the module.

Attention When Installing the Memory!

Please be noticed always install memory DIMMs in pairs starting from CPU1_DIMM0 and CPU1_DIMM1 and CPU2_DIMM0 and CPU2_DIMM1.



Refer to the table for supported DDR populations, and check the user's manual for the details.

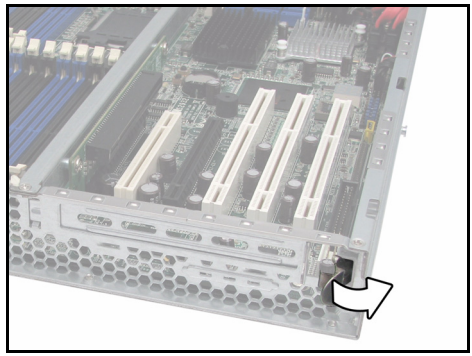
(Note: X indicates a populated DIMM slot)

	Single CPU Installed (CPU1 only)				Dual CPU installed (CPU1 and CPU2)			
Population Option	1	2	3	4	5	6	7	8
CPU1_DIMM0				X				X
CPU1_DIMM1				X				X
CPU1_DIMM2			X	X			X	X
CPU1_DIMM3			X	X			X	X
CPU1_DIMM4		X	X	X		X	X	X
CPU1_DIMM5		X	X	X		X	X	X
CPU1_DIMM6	X	X	X	X	X	X	X	X
CPU1_DIMM7	X	X	X	X	X	X	X	X
CPU2_DIMM0								X
CPU2_DIMM1								X
CPU2_DIMM2							X	X
CPU2_DIMM3							X	X
CPU2_DIMM4						X	X	X
CPU2_DIMM5						X	X	X
CPU2_DIMM6					X	X	X	X
CPU2_DIMM7					X	X	X	X

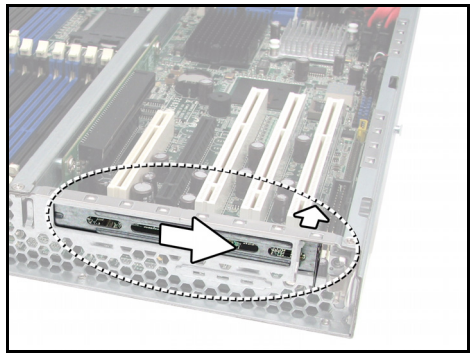
2.2.4 Installing a PCI-E Card

There is one PCI-E slot on the rear panel of GT24. Refer to the procedures below for PCI-E installation.

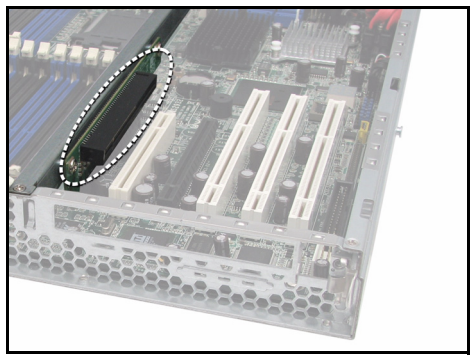
1. Push the tab of PCI-E slot on the rear panel in the direction as shown to release the bracket.



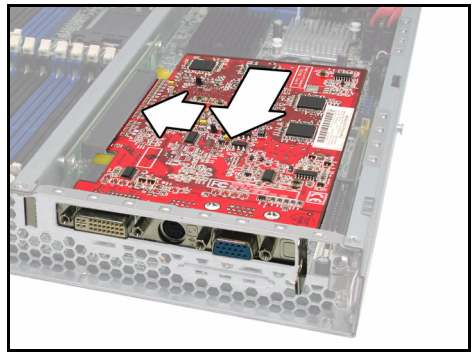
2. Move the bracket to right as shown.



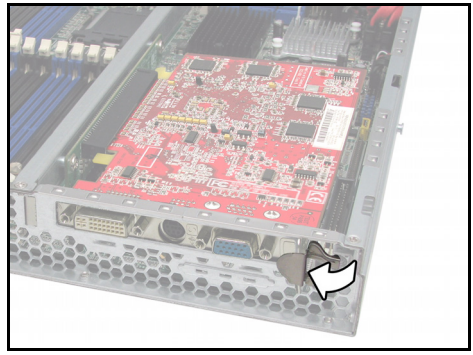
3. Locate the pre-installed PCI-E riser.



4. Insert the PCI-E card as shown.



5. Push the tab of PCI-E slot in the direction as shown to fix PCI-E card.

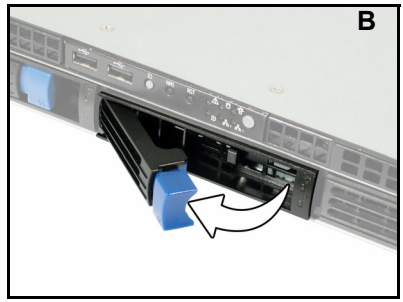


2.3 Installing the Hard Drives

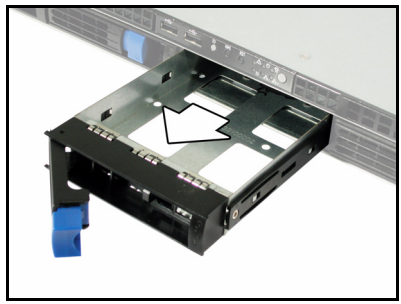
The TYAN Transport GT24 barebone system supports SAS/SATA hard drives.

Follow these instructions to install a SAS/SATA hard drive for model GT24 B2932.

1. Press the locking lever latch in the direction of arrow (**A**) and then pull the locking lever open (**B**).

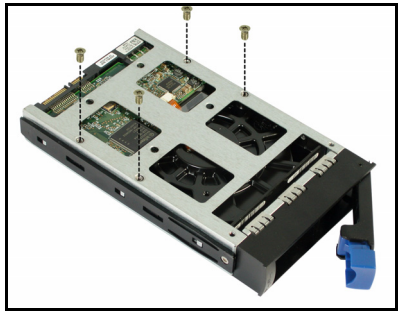


2. Slide the drive tray out.

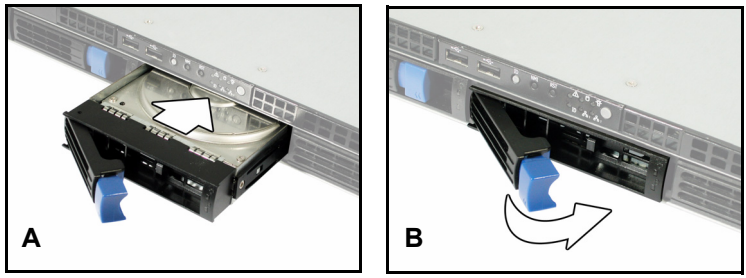


3. Place a hard drive into the drive tray.

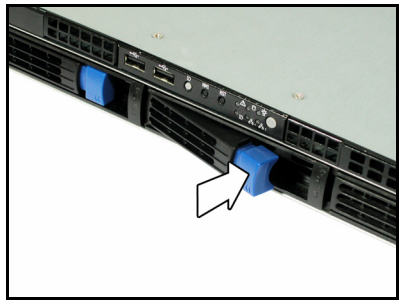
4. Using 4 HDD screws to secure the HDD.



5. Reinsert the drive tray into the chassis (A), ensuring that the drive tray is completely inserted into the chassis (B).



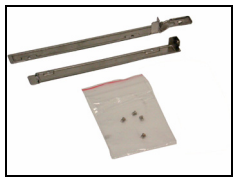
6. Pressing the locking lever to secure the hard drive tray.

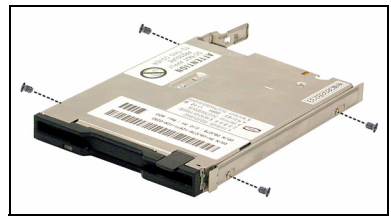


2.4 Installing the Slim FDD (Option)

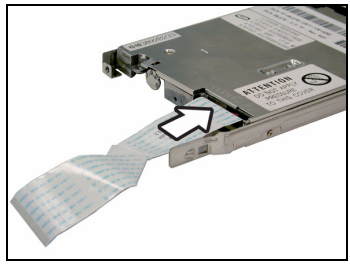
1. Locate the two FDD rails and screws from the FDD kit. Secure the two rails to FDD using four screws.

FDD Rails & Screws

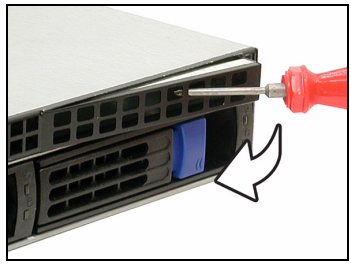




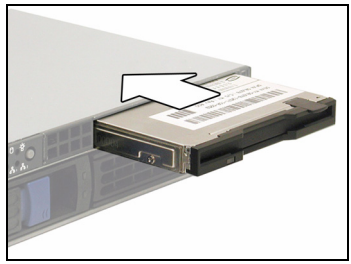
2. Connect the FFC cable to FDD.



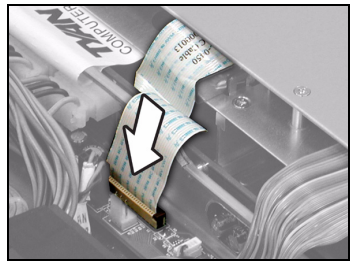
3. Using a screw driver to pull open the door of FDD tray.



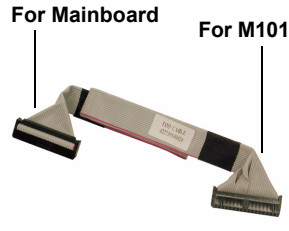
4. Insert FDD module into the tray.

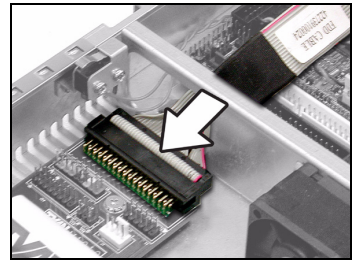


5. Connect the FFC cable to the connector on M1012 adapter board.

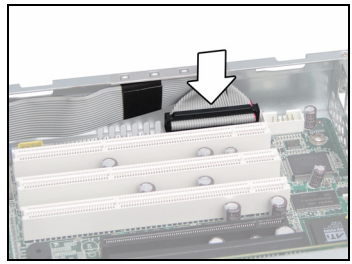


6. Locate the FDD cable from FDD kit. Connect the wrinkle side to the connector on M1012 adapter board. Refer to the picture below for the correct direction.





7. Connect the other side to the connector on motherboard.



Chapter 3: Replacing Pre-Installed Components

3.1 Introduction

This chapter explains how to replace pre-installed components including the motherboard, LED control board, DVD-ROM drive, M1012 adapter board, SAS/SATA backplane, and power supply.

Take note of the precautions in this section when installing your system.

3.1.1 Work Area

Make sure you have a stable, clean working environment. Dust and dirt can get into components and cause malfunctions. Use containers to keep small components separated. Putting all small components in separate containers keeps them from becoming lost. Adequate lighting and proper tools can prevent you from accidentally damaging the internal components.

3.1.2 Tools

The procedures that follow require only a few tools, including the following:

- A cross head (Phillips) screwdriver
- A grounding strap or an anti-static pad

Most of the electrical and mechanical connections can be disconnected using your fingers. It is recommended that you do not use needle-nosed pliers to remove connectors as these can damage the soft metal or plastic parts of the connectors.

3.1.3 Precautions

Components and electronic circuit boards can be damaged by static electricity. Working on a system that is connected to a power supply can be extremely dangerous. Follow the guidelines below to avoid damage to the Transport GT24 or injury to yourself.

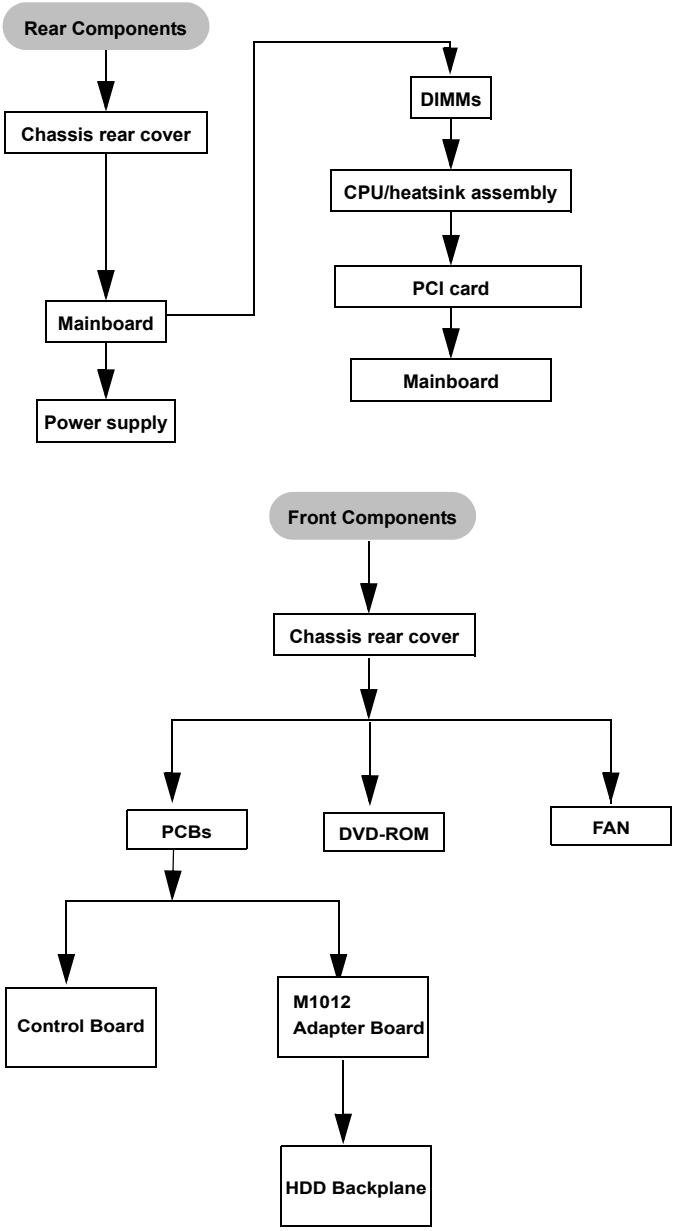
- Ground yourself properly before removing the top cover of the system. Unplug the power from your computer power supply and then touch a safely grounded object to release static charge (i.e. power supply case). If available, wear a grounded wrist strap. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Avoid touching motherboard components, IC chips, connectors, memory modules, and leads.
- The motherboard is pre-installed in the system. When removing the motherboard, always place it on a grounded anti-static surface until you are ready to reinstall it.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress circuit boards.
- Leave all components inside the static-proof packaging that they ship with until they are ready for installation.
- After replacing optional devices, make sure all screws, springs, or other small parts are in place and are not left loose inside the case. Metallic parts or metal flakes can cause electrical shorts.

Notes:

- All connectors are keyed to only attach one way.
- Always use the correct screw size as indicated in the procedures.

3.2 Disassembly Flowchart

The following flowchart outlines the disassembly procedure.

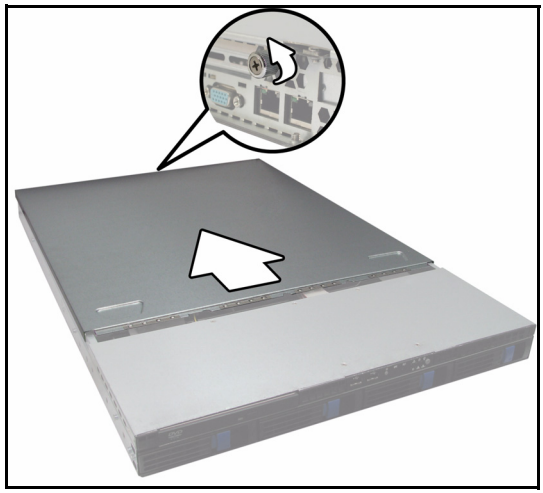


3.3 Removing the Cover

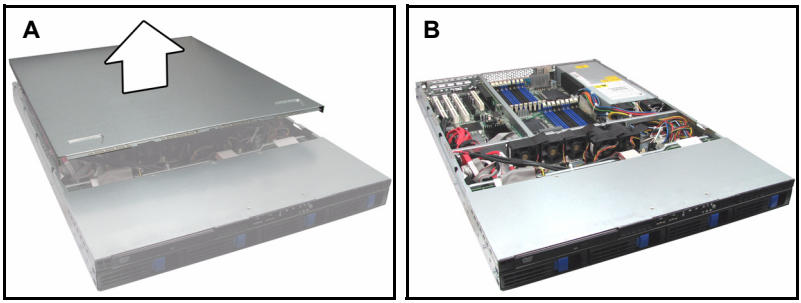
Before replacing any parts you must remove the chassis cover.

Follow these instructions to remove the cover of the Transport GT24 chassis cover.

1. Release the screw on the back side. Then slide the chassis cover in the direction of arrow.



2. Lift the cover off.



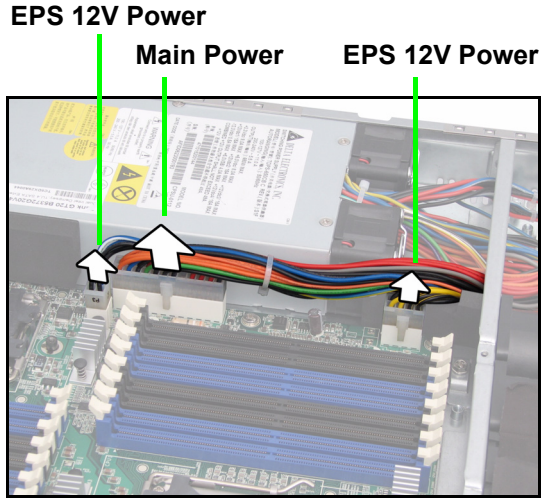
3.4 Replacing Motherboard Components

Follow these instructions to replace motherboard components, including the motherboard.

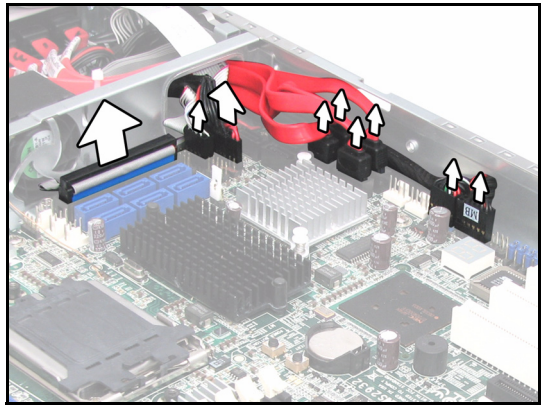
3.4.1 Disconnecting All Motherboard Cables

Before replacing the motherboard or certain components, remove cables connected to the motherboard. Follow these instructions to remove all motherboard cabling.

1. Disconnect ATX power cables



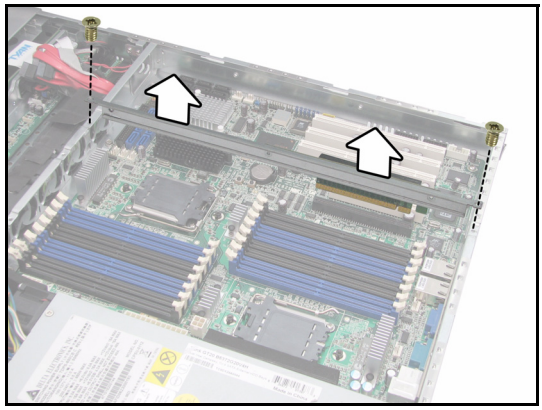
2. Disconnect DVD-ROM drive cable, SAS/SATA hard drive cables, USB, TYFP I, TYFP II, and Fan cable. Refer to the mainboard layout for the locations.



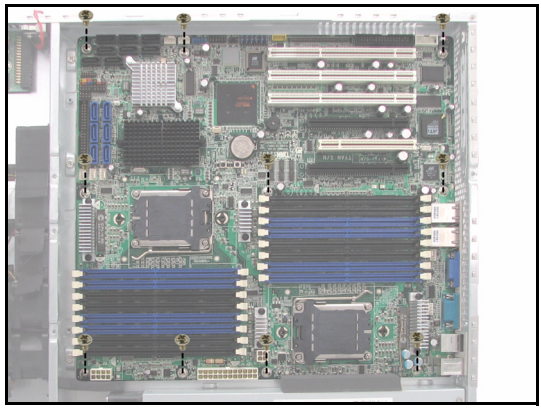
3.4.2 Removing the Motherboard

Follow these instructions to remove the motherboard from the chassis when all add-on components have been removed.

1. Remove two screws securing the link-bar to the chassis.



2. Remove ten screws securing the motherboard to the chassis.

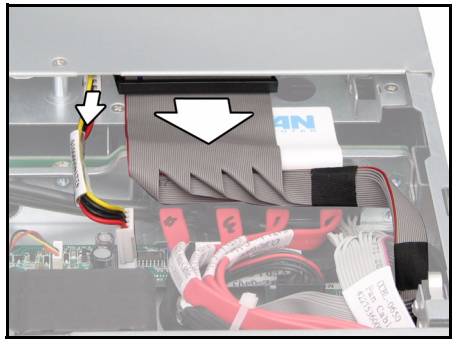


3. Remove the motherboard.

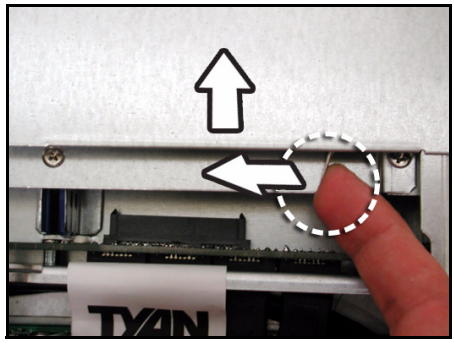
3.5 Replacing the Slim DVD-ROM

Follow these instructions to replace the DVD-ROM.

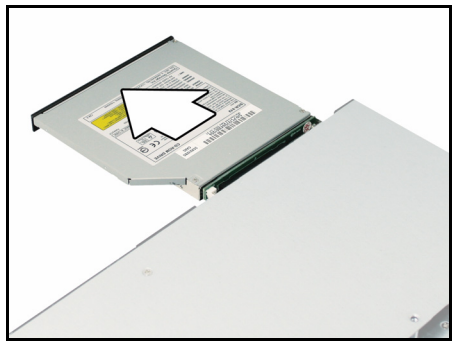
1. Remove power and data cables from the slim DVD-ROM adapter.



2. Press the tab in the directions as shown to release the DVD-ROM drive.



3. The DVD-ROM drive will be freed from the drive bay after pressing the tab.



4. Remove two screws that secure DVD-ROM drive to the bracket.

5. Replace the DVD-ROM drive.

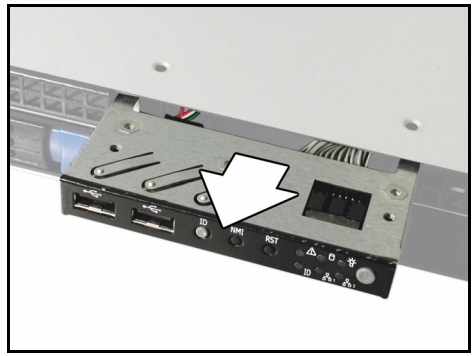
6. Secure DVD-ROM to the bracket using two screws. Then replace the unit into the drive bay and connect the DVD-ROM power and data cables.

3.6 Replacing the LED Control Board

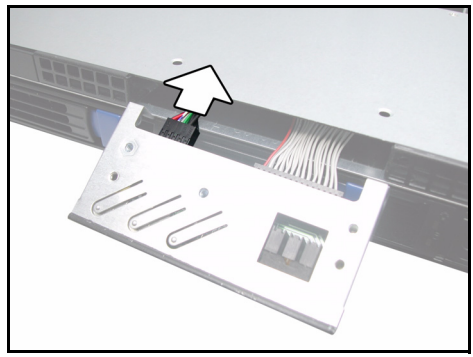
Follow these instructions to remove the LED control board.

1. Remove the two screws securing the LED control board to the chassis.

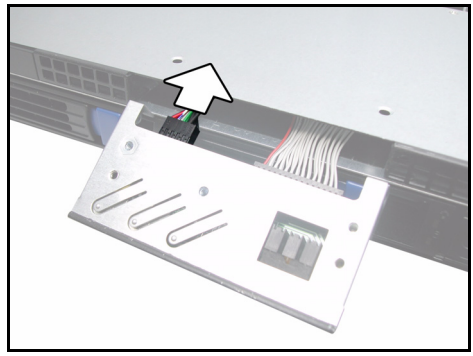
2. Lift the LED control board unit free from the chassis.



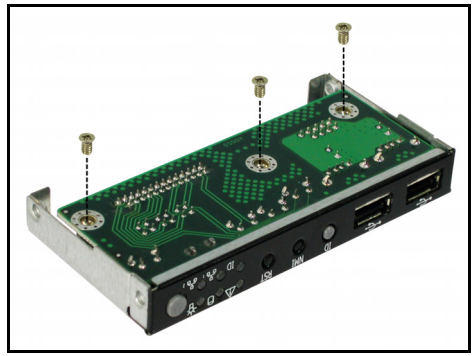
3. Unplug the USB cable from the connector.



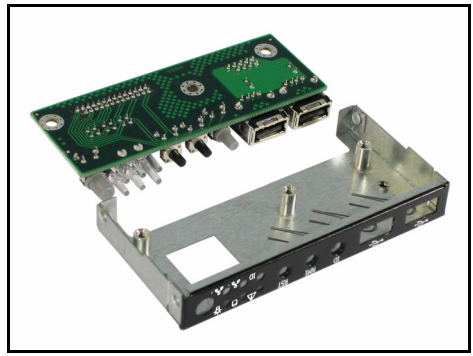
4. Unplug the ribbon cable from the connector.



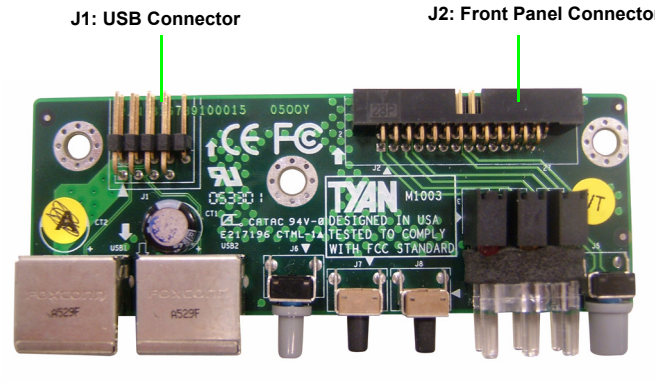
5. Remove the three screws securing the LED control board to the bracket.



6. Lift the LED control board free from the chassis. After replacement, insert the unit to the chassis following the above procedures in reverse.



3.6.1 M1003 LED Control Board Features



3.6.2 M1003 LED Control Board Connector Pin Definition

J1 USB Connector

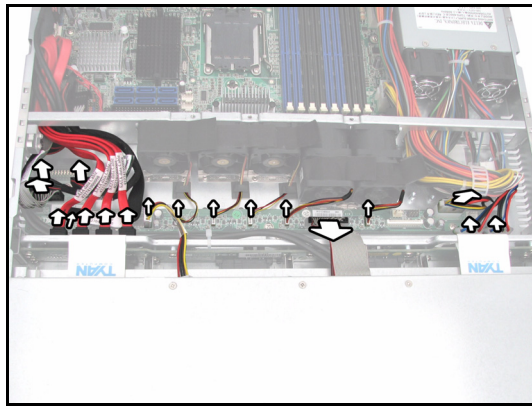
1	VCC5	2	VCC5
3	USB1-	4	USB0-
5	USB1+	6	USB0+
7	GND	8	GND
9	KEY PIN	10	GND

J2 Front Panel Connector

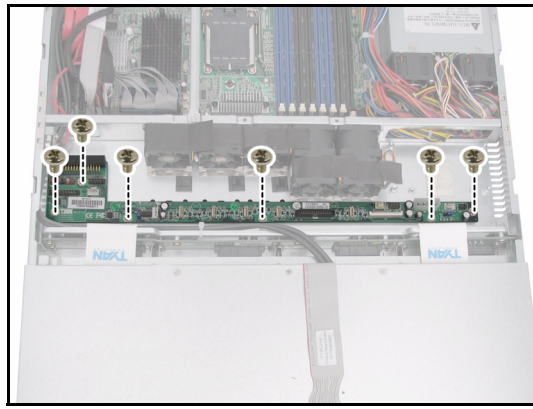
1	HDLED+	2	HDLED-
3	RESET+	4	RESET-
5	PW_LED+	6	PW_LED-
7	WLED+	8	WLED -
9	ICH_SMBDAT	10	ICH_SMBCLK
11	EXT_INT	12	VOLTAGE5
13	V5SB	14	INTRU#
15	PWR_SW+	16	PWR_SW-
17	LAN1_LED+	18	LAN1_LED -
19	LAN2_LED+	20	LAN2_LED-
21	LAN3_LED+	22	LAN3_LED-
23	ID_LED+	24	ID_LED-
25	ID_SW+	26	ID_SW-
27	KEY PIN	28	NC

3.7 Replacing the M1012 Adapter Board

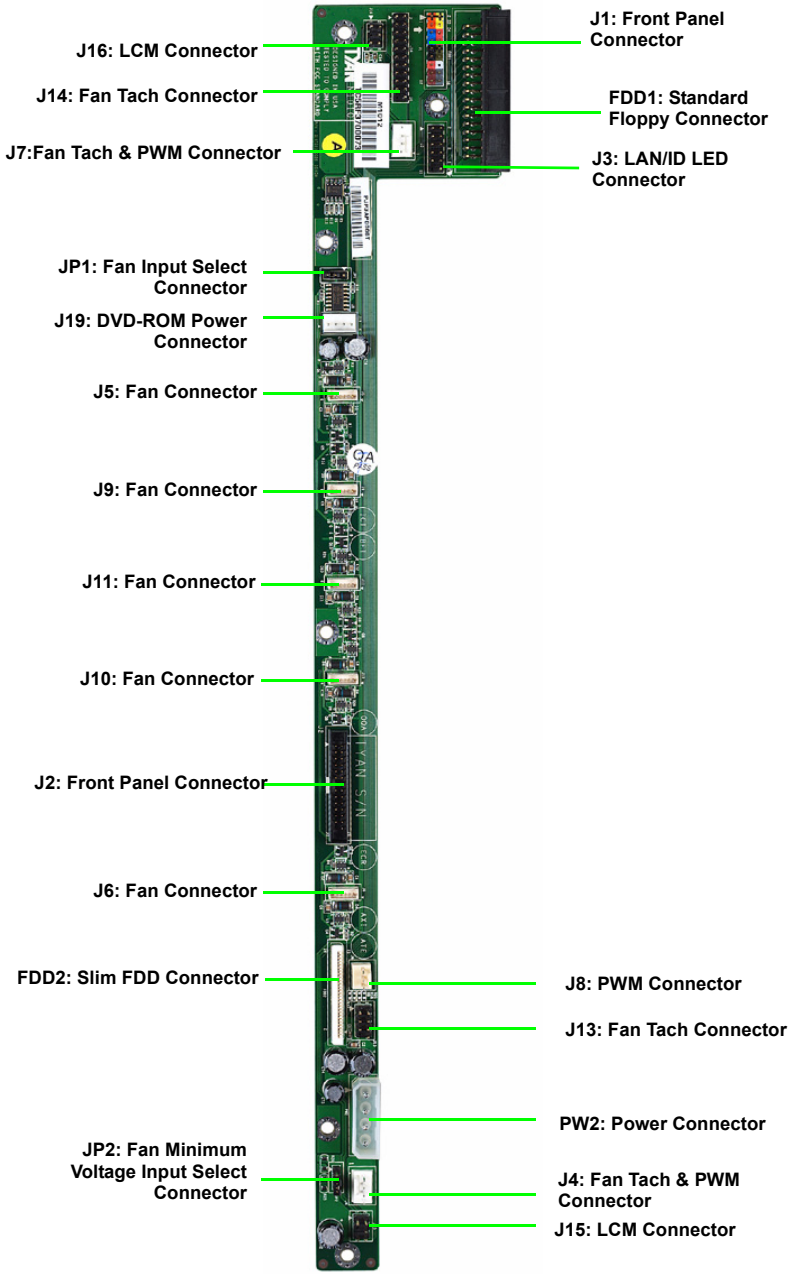
1. Remove all the cables connected to the adapter board, including front panel, TYFP, FAN, and DVD-ROM power cables. Refer to page 47 for the location



2. Remove the six screws to release the adapter board.



3.7.1 M1012 Adapter Board Features



3.7.2 M1012 Adapter Board Connector Pin Definition

J1 TYFP Front Panel Connector

1	HDLED+	2	PW_LED+
3	HDLED -	4	PW_LED -
5	RESET-	6	PWR_SW+
7	RESET+	8	PWR_SW -
9	VOLTAGE5	10	WLED+
11	EXT_INT	12	WLED-
13	V5SB	14	KEY PIN
15	ICH_SMBDAT	16	GND
17	ICH_SMBCLK	18	INTRU#

J2 Front Panel Connector

1	HDLED+	2	HDLED-
3	RESET+	4	RESET-
5	PW_LED+	6	PW_LED-
7	WLED+	8	WLED -
9	ICH_SMBDAT	10	ICH_SMSCLK
11	EXT_INT	12	VOLTAGE5
13	V5SB	14	INTRU#
15	PWR_SW+	16	PWR_SW-
17	LAN1_LED+	18	LAN1_LED -
19	LAN2_LED+	20	LAN2_LED-
21	LAN3_LED+	22	LAN3_LED-
23	ID_LED+	24	ID_LED-
25	ID_SW+	26	ID_SW-
27	KEY PIN	28	NC

J3 LAN/ID LED Connector

1	LAN1_LED+	2	LAN1_LED-
3	LAN2_LED+	4	LAN2_LED-
5	LAN3_LED+	6	LAN3_LED-
7	ID_LED+	8	ID_LED-
9	ID_SW+	10	ID_SW-
11	KEY PIN	12	NC

FAN Signal Related Connector Pin Definition

NOTE: The FAN signal naming is based on HW circuit design only. It might be different from the system fan naming.

J4 Fan TACH & PWM Connector

1	GND
2	NC
3	FAN1_TACH
4	PWM1 (Default)

J7 Fan TACH & PWM Connector

1	GND
2	NC
3	FAN7_TACH
4	PWM1 (Default)

J8 PWM Connector

1	GND
2	PWM2
3	FAN1_TACH

J13 Fan TACH Connector

1	GND	2	FAN1_TACH
3	GND	4	FAN2_TACH
5	GND	6	FAN3_TACH
7	KEY PIN	8	NC

J14 Fan TACH Connector

1	GND	2	FAN1_TACH
3	GND	4	FAN2_TACH
5	GND	6	FAN3_TACH
7	GND	8	FAN4_TACH
9	GND	10	FAN5_TACH
11	GND	12	FAN6_TACH
13	GND	14	FAN7_TACH
15	GND	16	FAN8_TACH
17	GND	18	FAN9_TACH
19	GND	20	FAN10_TACH
21	KEY PIN	22	PWM

J6 Fan Connector

1	FAN1_12VPWM
2	FAN1_TACH
3	GND
4	GND
5	FAN2_TACH
6	FAN2_12VPWM

J10 Fan Connector

1	FAN3_12VPWM
2	FAN3_TACH
3	GND
4	GND
5	FAN4_TACH
6	FAN4_12VPWM

J11 Fan Connector

1	FAN5_12VPWM
2	FAN5_TACH
3	GND
4	GND
5	FAN6_TACH
6	FAN6_12VPWM

J9 Fan Connector

1	FAN7_12VPWM
2	FAN7_TACH
3	GND
4	GND
5	FAN8_TACH
6	FAN8_12VPWM

J5 Fan Connector

1	FAN9_12VPWM
2	FAN9_TACH
3	GND
4	GND
5	FAN10_TACH
6	FAN10_12VPWM

J15 & J16 LCM Connectors

1	LCM_+5V	2	LCM_SIN
3	KEY PIN	4	GND
5	LCM_+5VSB	6	LCM_SOUT

JP1 Fan Input Select Connector

Pin1 & Pin2 Close	Fan PWM signal from J8
Pin2 & Pin3 Close	Fan PWM signal from J4, J7 & J14 (Default)

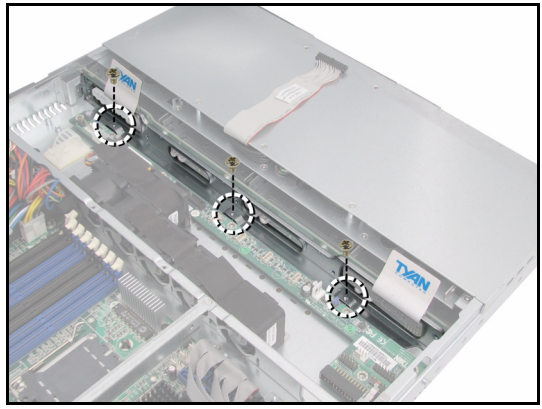
JP2 Fan Input Select Connector

Pin1 & Pin2 Close	0V
Pin2 & Pin3 Close	+5V (Default)

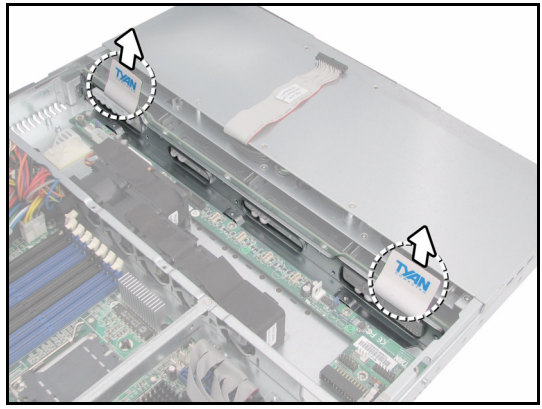
3.8 Replacing the SAS/SATA Backplane

NOTE: The procedures for replacing SAS/SATA backplanes are the same.

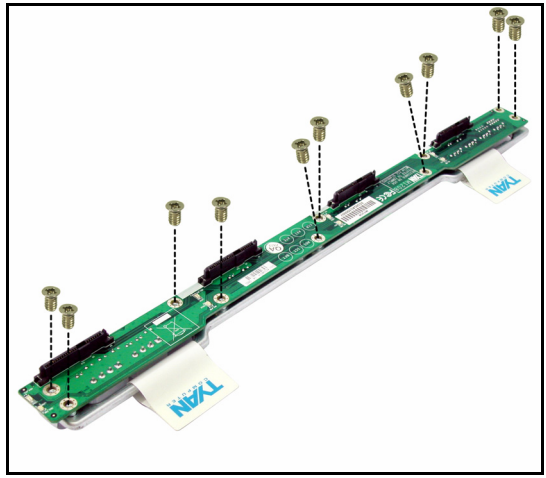
1. Remove the 3 screws securing the adapter board to the chassis.



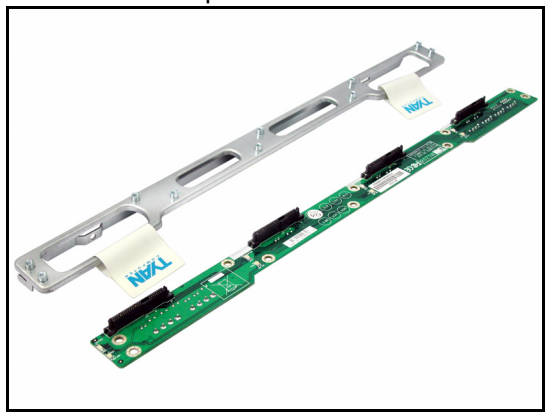
2. Grab the two labels to lift the adapter board.



3. Remove the ten screws that secure the bracket to the adapter board.

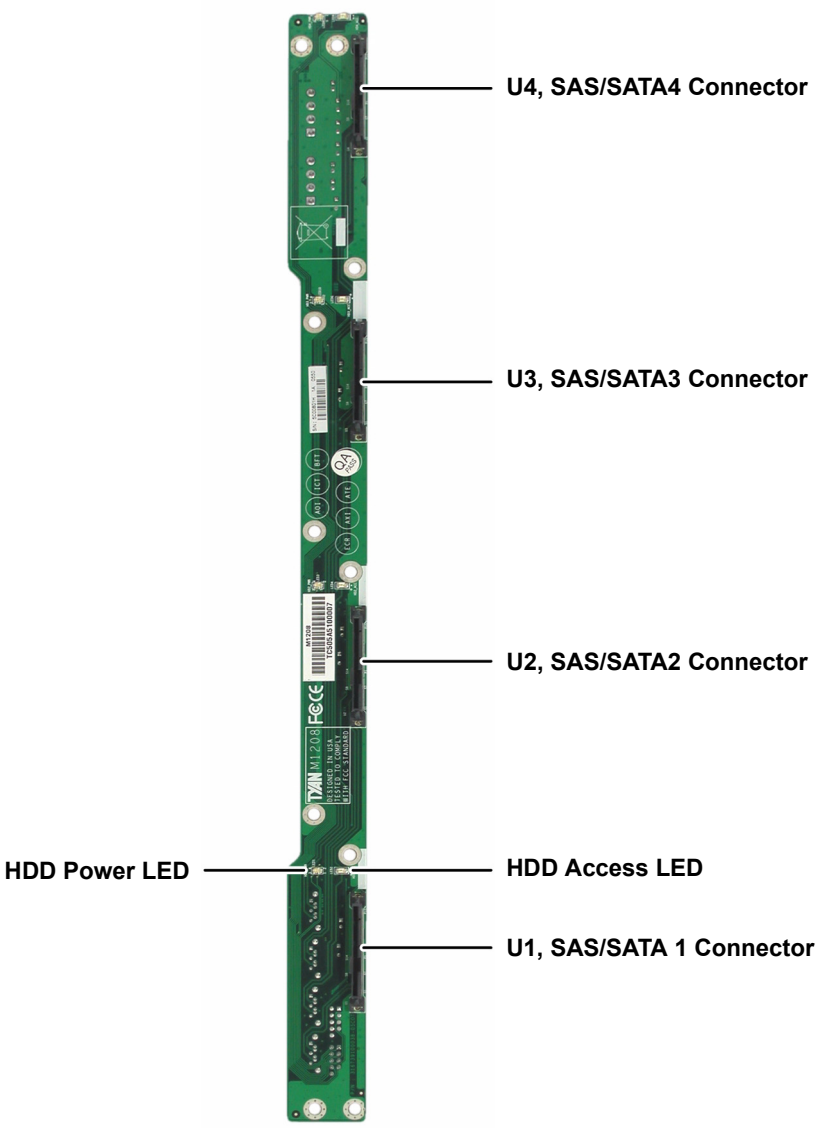


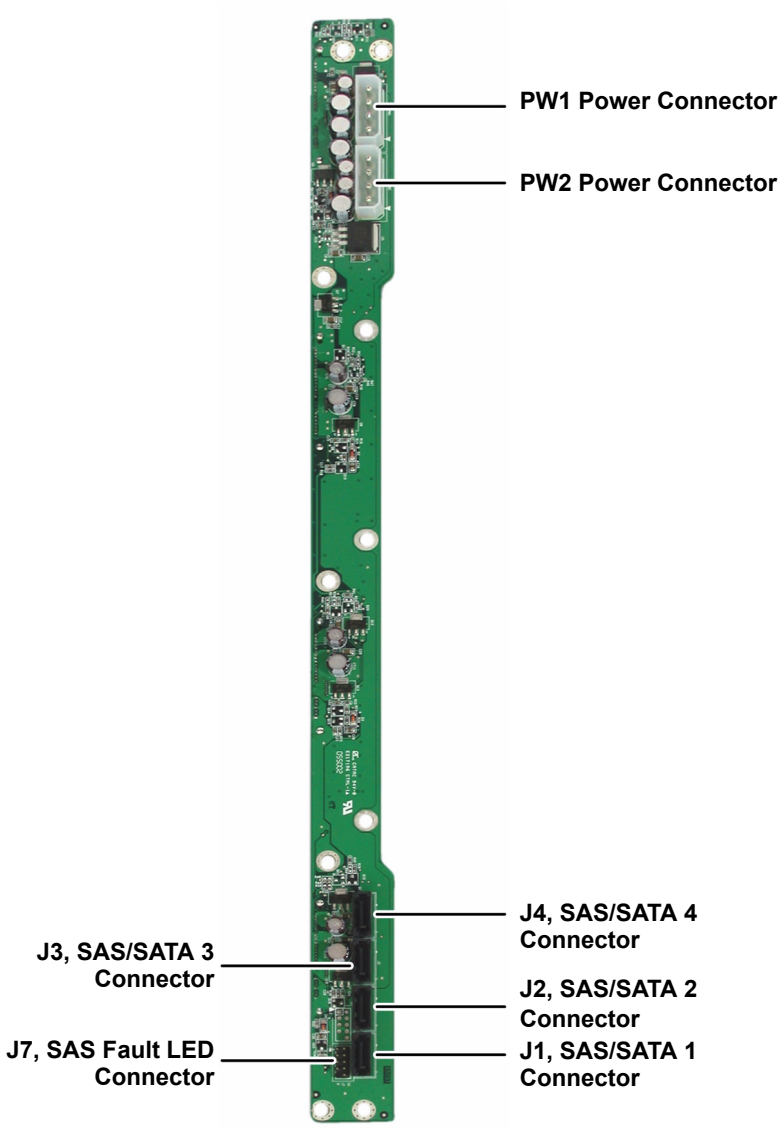
4. Release the adapter board free from the bracket.



5. Replace the unit to the chassis following the reverse procedures from step 1 to 4 after done.

3.8.1 SAS/SATA Backplane (M1208) Features

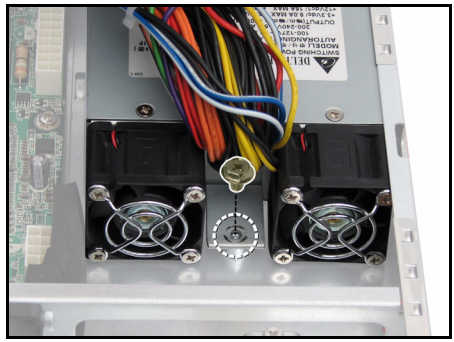



PW1 Power Connector
PW2 Power Connector
J4, SAS/SATA 4 Connector
J3, SAS/SATA 3 Connector
J2, SAS/SATA 2 Connector
J7, SAS Fault LED Connector
J1, SAS/SATA 1 Connector

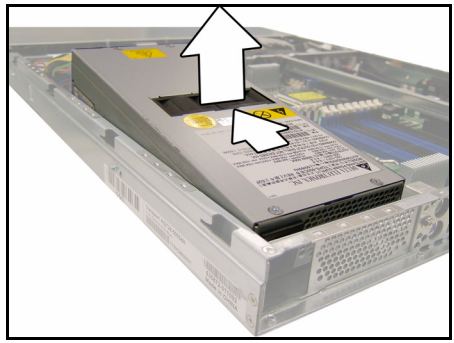
3.9 Replacing the Power Supply

1. Remove the two screws that secure the power supply to the chassis.

2. Remove the screw that secure the power supply to the chassis



3. Lift the power supply free from the chassis.



4. Place a new power supply in position in the chassis and secure in place with the three screws.

Appendix I: BIOS Differences

The BIOS of B2932 is similar to the BIOS of S2932. There is only one menu different. You may refer to the attached motherboard manual for the complete BIOS information. The differences between B2932 and S2932 is on the "Advanced/Hardware Health Information" menu. See the following for the differences.

B2932 Advanced/Hardware Health Information

BIOS Setup Utility Advanced		
H/W Health Function	[Enabled]	Enables Hardware Health Monitoring Device
Auto FAN Power Control	[Enabled]	
FAN Fail LED Indicator	[Enabled]	
Hardware Health Event Monitoring		
▶Mainboard Voltages Report		
CPU1 Temperature	xxxxxx	
CPU2 Temperature	xxxxxx	
AMB1 Temp (Near NEC)	xxxxxx	
AMB2 Temp (Near MCP55)	xxxxxx	
System FAN1 Speed (TACH1)	xxxxxx	
System FAN2 Speed (TACH2)	xxxxxx	
System FAN3 Speed (TACH9)	xxxxxx	
System FAN4 Speed (TACH10)	xxxxxx	←→ Select Screen ↑↓ Select Item + - Change Option F1 General Help F10 Save and Exit ESC Exit
System FAN5 Speed (TACH5)	xxxxxx	
System FAN6 Speed (TACH6)	xxxxxx	
System FAN7 Speed (TACH7)	xxxxxx	

S2932 Advanced/Hardware Health Information

BIOS Setup Utility

Advanced

Hardware Health Configuration		Enables Hardware Health Monitoring Device.
H/W Health Function	[Enabled]	
CPUFAN1, 2 FAN1,2 PWM Control	[Disabled]	
FAN3, FAN4, FAN5 PWM Control	[Disabled]	
FAN Fail LED Indicator	[Disabled]	
Hardware Health Event Monitoring		←→ Select Screen ↑↓ Select Item +/ - Change Option Tab Select Field F1 General Help F10 Save and Exit ESC Exit
▶ Mainboard Voltages Report		
CPU1 Temperature	:xx ºC/ xxx ºF	
CPU2 Temperature	:xx ºC/ xxx ºF	
Ambient Temp (Near NEC)	:xx ºC/ xxx ºF	
Ambient Temp (Near MCP55)	:xx ºC/ xxx ºF	
CPU1 FAN1 Speed (TACH1)	:xxxx RPM	
CPU1 FAN2 Speed (TACH2)	:xxxx RPM	
FAN1 Speed (TACH3)	:xxxx RPM	
FAN2 Speed (TACH4)	:xxxx RPM	
FAN3 Speed (TACH5)	:xxxx RPM	
FAN4 Speed (TACH6)	:xxxx RPM	
FAN5 Speed (TACH7)	:xxxx RPM	

Table of Differences

	S2932	**B2932**
FAN Fail LED Indicator	Disabled	Enabled
Auto Fan Control	Disabled	Enabled
Hardware Monitor Fan	CPU FAN1 Speed CPU FAN2 Speed FAN1 Speed FAN2 Speed FAN3 Speed FAN4 Speed FAN5 Speed	System FAN1 Speed System FAN2 Speed System FAN3 Speed System FAN4 Speed System FAN5 Speed System FAN6 Speed System FAN7 Speed

Appendix II: Cable Connection Tables

SAS/SATA Cable

Table 1: GT24 B2932

HDD Drive	Connect to	Motherboard
HDD1	→	SATA0/SAS0
HDD2	→	SATA1/SAS1
HDD3	→	SATA2/SAS2
HDD4	→	SATA3/SAS3

FAN Cable

Table 2: System Fan to M1012 Adapter Board

System Fan	Connect to	M1012
Fan 1 / Fan 6	→	J6 Fan Connector
Fan 2 / Fan 7	→	J10 Fan Connector
Fan 3	→	J11 Fan Connector
Fan 4	→	J9 Fan Connector
Fan 5	→	J5 Fan Connector

Table 3: M1012 Adapter Board to Motherboard

M1012	Connect to	Motherboard
J14 Fan connector	→	J63 Fan connector

Power Supply Cable

Table 4: Power Supply to Motherboard

Power Supply	Connect to	Motherboard
P1 24-pin power cable	→	PW1 24-pin connector
P2 8-pin power cable	→	PW2 8-pin connector
P3 4-pin power cable	→	PW3 4-pin connector

Table 5: Power Supply to M1012 Adapter Board

Power Supply	Connect to	M1012
P4 4-pin power cable	→	PW2 4-pin connector

The Other Cable

Table 6: M1003 Front Panel Control Board Related Cables

M1003 J1 USB connector	→	Motherboard J41
M1003 J2 connector	→	M1012 J2 connector

Table 7: DVD-ROM Related Cables

Motherboard IDE connector (J61)	→	DVD-ROM Backplane
M1012 J19 power connector	→	DVD-ROM Backplane

Table 8: FDD Related Cables

M1012 FDD1 connector	→	Motherboard FDD connector
M1012 FDD2 connector	→	Slim FDD drive

Table 9: SAS Fault LED Cable

M1208	→	Motherboard
J7 connector	→	J66 connector

Table 10: M1012 Adapter Board to Motherboard

M1012	Connect to	Motherboard
J1 Front Panel connector	→	J64 TYFP I connector
J3 LAN/ID cable	→	J65 TYFP II connector

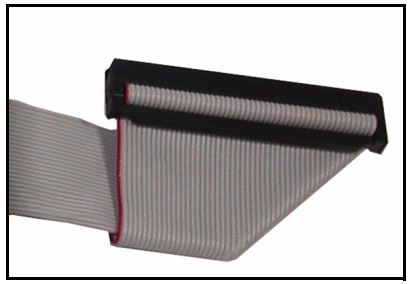
Appendix III: Installing SMDC Cards

The following provides you with the information on installing SMDC cards. You may refer to the following for installing M3289 or M3290 into HDD tray or chassis.

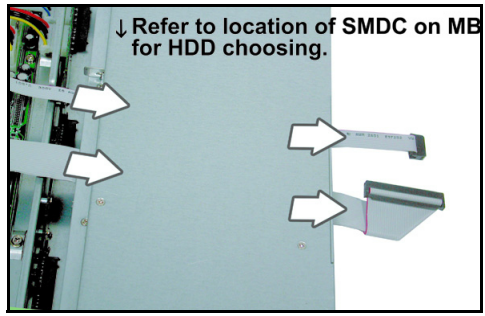
Screws List

No.	Screw	Size	Quantity
A		Flat #6-32 -5L	16
B		B-type #6-32-5L	4
C		Stand-off #6-32-13.5L	2

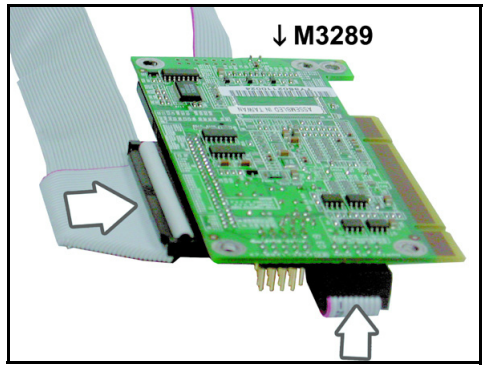
1. Fold up the cable.



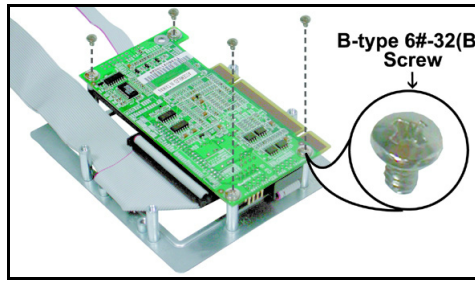
2. a: Choose a HDD tray. b: Insert the cable into the rear of HDD tray. c: Pull the cable out.



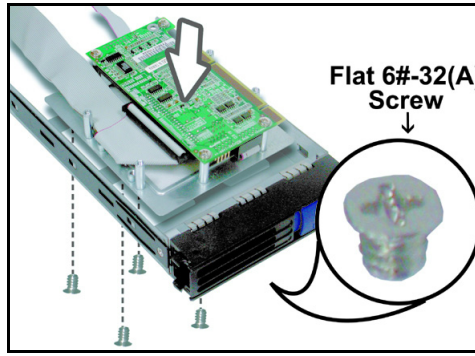
3. Connect the cable to M3289.



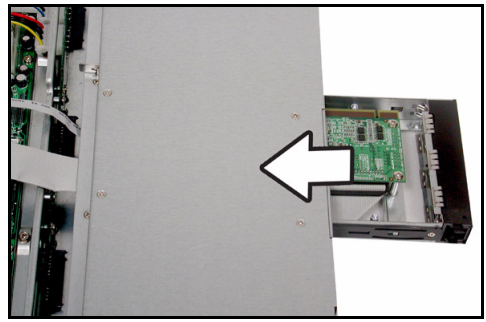
4. Align M3289 in reverse with 4 “M1” stand-offs. Secure the SMDC with 4 screws as illustrated.



5. Secure M3289 onto HDD tray as illustrated.



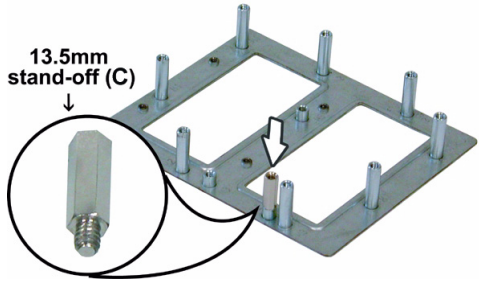
6. Insert and secure the HDD tray. **NOTE:** For internal or dummy HDD tray, secure the HDD tray with 1 or 2 screws.



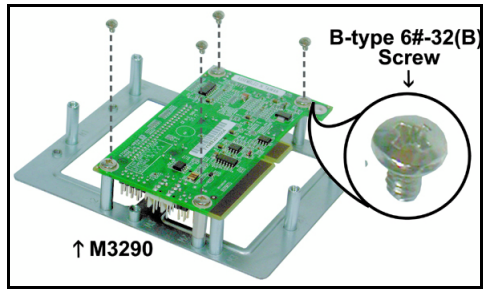
7. Arrange and connect the cable to SMDC connector on mainboard. Be careful not to block the air flow.

Installing M3290/M3291 into HDD tray

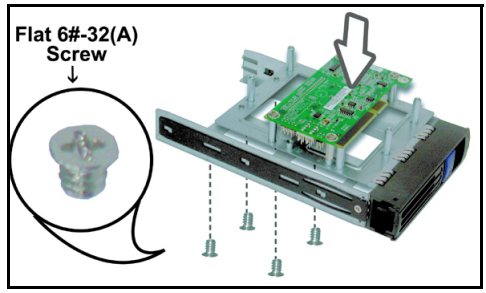
1. Secure a removable stand-off of 13.5mm to the location of “M2” stand-off as illustrated on SMDC bracket.



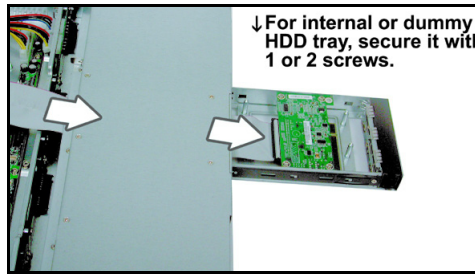
2. Secure M3290 in reverse to 4 “M2” stand-offs on bracket.



3. a: Choose a HDD tray. **NOTE**: Refer to the location of SMDC connector on mainboard for choosing a HDD tray.
   b: Secure SMDC to the HDD tray.



4. a: Inset the cable into the rear of HDD tray. b: Connect the cable to M3290. c: Insert and secure HDD tray.



5. Arrange and connect the cable to SMDC connector on mainboard. Be careful not to block the air flow.

Technical Support

If a problem arises with your system, you should first turn to your dealer for direct support. Your system has most likely been configured or designed by them and they should have the best idea of what hardware and software your system contains. Hence, they should be of the most assistance for you. Furthermore, if you purchased your system from a dealer near you, take the system to them directly to have it serviced instead of attempting to do so yourself (which can have expensive consequences).

If these options are not available for you then Tyan Computer Corporation can help.Besides designing innovative and quality products for over a decade, Tyan has continuously offered customers service beyond their expectations. Tyan's website (**www.tyan.com**) provides easy-to-access resources such as in-depth Linux Online Support sections with downloadable Linux drivers and comprehensive compatibility reports for chassis, memory and much more. With all these convenient resources just a few keystrokes away, users can easily find the latest software and operating system components to keep their systems running as powerful and productive as possible. Tyan also ranks high for its commitment to fast and friendly customer support through email. By offering plenty of options for users, Tyan serves multiple market segments with the industry's most competitive services to support them.

"Tyan's tech support is some of the most impressive we've seen, with great response time and exceptional organization in general" - Anandtech.com

Please feel free to contact us directly for this service at **techsupport@tyan.com**

Help Resources:

1. See the beep codes section of this manual.

2. See the TYAN website for FAQ's, bulletins, driver updates, and other information: http://www.tyan.com

3. Contact your dealer for help BEFORE calling TYAN.

4. Check the TYAN user group: alt.comp.periphs.mainboard.TYAN

Returning Merchandise for Service

During the warranty period, contact your distributor or system vendor FIRST for any product problems. This warranty only covers normal customer use and does not cover damages incurred during shipping or failure due to the alteration, misuse, abuse, or improper maintenance of products.

NOTE: A receipt or copy of your invoice marked with the date of purchase is required before any warranty service can be rendered. You may obtain service by calling the manufacturer for a Return Merchandise Authorization (RMA) number. The RMA number should be prominently displayed on the outside of the shipping carton and the package should be mailed prepaid. TYAN will pay to have the board shipped back to you.